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| 10/666,497 | 09/19/2003 | Alexander T. Chenvainu | 00216-616001 / OB-211 | 9179 |
| 26161 | 7590 | 12/01/2004 | EXAMINER | |
| FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110 | | | COLE, LAURA C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1744 | |

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,497

Applicant(s)CHENVAINU ET AL. *NA***Examiner**

Laura C Cole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☒ Claim(s) 1-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 102703,020904.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. (see Application numbers cited on Pages 6-7).

Claim Objections

2. Claims 1-32 are objected to because of the following informalities:

In Claims 1-31 there is an inconsistency in the preambles of the claims. For example, Claim 1 recites "A head for a power toothbrush..." However, claims that depend from Claim 1 (such as Claims 2-3, etc.) have the preamble "The toothbrush head..." The inconsistency is found between the independent claims (Claims 1, 4, 25, and 28) and the claims that are dependent (Claims 2-3, 5-24, 26-27, and 29-31).

Claim 3 recites the limitation "the same length" in Line 1 and the limitation "the lowest point" in Line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the vicinity" in Line 2. There is insufficient antecedent basis for this limitation in the claim.

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Claim 32 recites the limitation "the dentition" in Line 5. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 7-8, 10-11, 17, 25-26, and 31-33 are rejected under 35

U.S.C. 102(b) as being anticipated by Driesen et al., USPN 5,652,990.

Driesen et al. disclose the claimed invention including a head (37), an elongated support member (38), and a plurality of bristles extending from the support member (48, 50, 60, 62, 64, 68, 82), at least some of the bristles have different heights (see Figures 2, 5), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 2-4). The bristles have different lengths measured from a top surface to the support member (see Figures 2 and 5). The bristles are arranged in tufts (60, 62, 64, 82). The two planes of symmetry are arranged about a central axis of the brush head intersecting in a vicinity of the

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center (one plane being vertical on axis "52", the other plane being vertical on axis "68"). The head is configured for use on a power toothbrush having a rotationally oscillating motion (Column 3 Lines 63-67). The tallest bristles are from about 20-50% greater than the height of the shortest bristles (if the shortest bristle is 7mm and the longest is 9mm, the tallest bristle would be approximately 28% greater than the shortest; Column 3 Lines 26-38). The power toothbrush includes a handle (22). The toothbrush contacts teeth (Column 1 Lines 33-50).

4. Claims 1, 7-8, 10-11, 17-18, 20-22, 25, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Kressner et al., USPN 6,021,538.

Kressner et al. disclose the claimed invention including a head (38), an elongated support member (44), and a plurality of bristles extending from the support member (part of tufts 60, 62, 72, 74, 76, or 86), at least some of the bristles have different heights (see tables in Figures 2-5), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 2-5). The bristles are arranged in tufts (60, 62, 72, 74, 76, 86). The two planes of symmetry are arranged about a central axis of the brush head intersecting in a vicinity of the center (one plane being vertical on axis "52", the other plane being vertical on an unlabeled axis that extends horizontally through the brush head perpendicular to "52" when it intersects "52" and "50"; see Figures 2-5). The head is configured for use on a power toothbrush having a rotationally oscillating motion (Column 3 Lines 12-17). A top surface of the support member has an overall surface area from about 170 to 200mm² (Column 3 Lines 47-50; when the diameter is 15mm

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the area is 176.625 mm^2 .) The top surface has a length and width (or diameter since it is circular) of 15mm, and a width of about 13 to 14 mm (see Column 3 Lines 47-50). Since the top surface of the support member is essentially circular (Column 3 Lines 47-50), there is an aspect ratio of 1. The power toothbrush includes a handle (22). The toothbrush contacts teeth (Column 1 Lines 33-36).

5. Claims 1, 2, 7-8, 10, 15, 23, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Shipp, USPN 5,604,951.

Shipp discloses the claimed invention including a head (14) that is an elongated support member (see Figure 3), and a plurality of bristles extending from the support member (Column 4 Lines 21-22; 26, 28, 30), at least some of the bristles have different heights (see Figures 2 and 5), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 2 and 5). The bristles have different lengths as measured from a top surface of the support member (see Figures 2, 3, and 5). The bristles are arranged in tufts (26, 28, 30). The two planes of symmetry are arranged about a central axis of the brush head (one plane extending longitudinally vertically in the direction that "16" extends, the other plane extending perpendicular to "16" and also vertical or in other word, extending through the page in Figure 2). The two plans of symmetry would then intersect in the center of the elongated support member (in the center of the head of Figure 1 or 4). There are one or more elastomeric elements (18, 36, or 34). The top surface of the support member has a rounded rectangle shape (Figures 1 or 4).

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6. Claims 1-2, 4-5, 7-10, 12, 14, 16-17, 23, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hudson et al., USPN 5,881,425.

Hudson et al. disclose the claimed invention including a head (12) that is an elongated support member (Figure 2), and a plurality of bristles extending from the support member (14, 50, 52), at least some of the bristles have different heights (see Figures 5A and 5B), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figure 6). The bristles have different lengths measured from a top surface of the support member (see Figures 5A-5B). The bristles are arranged in tufts (54, 56, 58, 62, 64, 66). The tufts having at least three different heights (Figures 5A, 5B; Column 6 Lines 49-55, Column 7 Lines 8-14) and are arranged so that the tips define a rounded contour (Figures 4-5B; Column 6 Lines 56-59). The two planes of symmetry are arranged about a central axis of the brush head (one plane extending longitudinally vertically in the direction that "16" extends, the other plane extending perpendicular to "16" and also "vertical" or in other words, divides the brush head horizontally in half in Figure 6). The bristles have at least four different heights (see Figure 5B). The support member has an overall surface area from about 170 to 200mm² (the length of the head is 3 cm, Column 4 Lines 29-30 and various elliptical widths in Table 1, using the largest width the area is about 235mm², which is *about* 200mm²). The bristle heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 5A-6). The tallest bristles have a height from about 20-50% greater than the height of the shortest bristles (Column 6 Lines 49-

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55, Column 7 Lines 8-14 have bristle ranges that would fall in to that range, for example if the shortest is 7mm and the tallest is 12mm). A top surface of the support member is somewhat elliptical or a rounded rectangle (see Figures 2 or 6).

7. Claims 1-10, 16-17, 23-24, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Millar, USPN 5,315,731.

Hudson et al. disclose the claimed invention including a head (20) that is an elongated support member (Figures 1, 2, and 5), and a plurality of bristles extending from the support member (31, 32), at least some of the bristles have different heights (see Figure 5; Column 4 Lines 18-34), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 2 and 4). The bristles of tufts 31 and 32 have different lengths measured from a top surface of a support member (Column 4 Lines 18-34). The bristles of tufts 31 (or 32) extend the same length from a top surface of the support member and the top surface is contoured so that the bristles of tufts 31 have different heights as measured from a horizontal plane taken through the lowest point on the top surface (see Figures 1 and 5). The tufts of 31 appear to have at least three different heights due to the contour of the support member in Figure 5. The bristles are arranged in tufts (31 or 32). The two planes of symmetry are arranged about a central axis of the brush head (one plane extending longitudinally vertically in the direction that "20" extends, the other plane extending perpendicular to "20" and also "vertical" or in other words, divides the brush head horizontally in half in Figure 2). The bristles

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define a continuously curved surface (see Figures 1 and 5). The heights are symmetric, in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 1, 2, and 5). The tallest bristles are from about 20-50% greater than the height of the shortest bristles (Column 4 Lines 18-34). The support member has a rounded rectangle shape (see Figures 2 or 4). The top surface has a concave shape (see Figures 1 or 5).

8. Claims 1, 2, 4, 5, 7-13, 16-18, 20, 21, 22, 25-26, 28-29, 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Brown, Jr. et al., US 2002/0138926.

Brown Jr. et al. disclose the claimed invention including a head (14 or 50), an elongated support member (34 or 50), and a plurality of bristles extending from the support member (included in tufts 6, 18, 20, 22, 24, 26, 52, 54, 56, 58, 60, 62), at least some of the bristles have different heights (see Figures 7 and 8 particularly), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see Figures 3 and 6). The bristles have different lengths measured from a top surface of the support member (see Figures 1, 3, 5, 7, 8). The tufts of bristles have at least three different heights (Paragraphs 23-29, 37-42, 44) and the tufts are arranged so that the tips define a rounded contour (see Figures 1, 3, 5, and 8). The bristles are arranged in tufts (6, 18, 20, 22, 24, 26, 52, 54, 56, 58, 60, 62). The two planes of symmetry are arranged about a central axis of the brush head (one plane at "A" as shown in Figure 6 and the other plane at "B" as shown in Figure 6 or the same planes as drawn in Figure 6 may be used in Figure 3).

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The bristles define a continuously curved surface (see Figures 1 and 5). The head is configured for use on a power toothbrush having a rotationally oscillating motion (Paragraph 22). The tufts have at least four different heights (Paragraphs 23-29). The rounded contour is lowest adjacent a pivot point of the head (tufts "16" are central to the head and "pivot point" in Figure 1, the tufts "52" are central to the head, central axis, and "pivot point" in Figure 8). The heights are symmetric, in a non-translatable mirror image symmetry, about two planes (see Figures 3, 6, and 8, particularly Figure 6 that clearly indicates the symmetry).

The tallest bristles are from about 20-50% greater than the height of the shortest bristles (tuft 26 is about 38% greater in height than tuft 16). The top surface of the support member has a length of *about* 14mm (13.25mm, Paragraph 44). It also has a width in the range of 13-14mm (13.25mm, Paragraph 44). Since the head is circular, there is an aspect ratio of 1. The device is a power toothbrush and includes a handle (12). There is a drive mechanism configured to drive the head (Paragraph 30). The powered toothbrush is for contacting teeth (Paragraph 33, 44).

9. Claims 1-2, 4-5, 7-10, 12-13, 16-19, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Ernest et al., USPN 4,399,582.

Ernest et al. disclose the claimed invention including a head (15) which is an elongated support member (15), and a plurality of bristles extending from the support member (41, 47), at least some of the bristles have different heights (Figures 6 and 9), the bristles being arranged so that their heights are symmetric in a non-translatable mirror image symmetry about two planes of symmetry (see

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Figure 4). The bristles have different lengths measured from a top surface of the support member (see Figures 6 and 9). The bristles may have at least three different heights (see Figures 6 and 9, and tufts arranged so that the tips define a rounded contour (see Figure 9). The bristles are arranged in tufts (see bristle "clusters", Figure 4). The two planes of symmetry are arranged about a central axis of the brush head (one plane extending longitudinally vertically in the direction that 13' extends in Figure 4, the other plane extending perpendicular to that axis and extends centrally "into" the page vertically as the head is displayed in Figure 4) thereby having the two planes intersect in a center of the elongated support member. The bristles have at least four different heights (see Figure 9). The rounded contour is the lowest adjacent a pivot point on the head (see Figures 6, 9, the rounded contour comprises the shortest and lowest tufts and are positioned above pivot point 27). The heights are symmetric, in a non-translatable mirror image symmetry about the two planes of symmetry (see Figures 6, 9, Column 6 Lines 57-59). The tallest bristles are from about 20 to 25% greater than the height of the shortest bristles (Column 6 Lines 57-59, the tallest bristles being 10mm and the shortest being 8mm). The top surface has a length of about 14 to 19mm (Column 6 Lines 46-48), which is *about* 16 to 17mm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 15 [dependent on claim 4] is rejected under 35 U.S.C. 103(a) as being unpatentable over Millar, USPN 5,315,731 in view of Shipp, USPN 5,604,951.

Millar and Shipp discloses all elements above, however Millar does not include a toothbrush head having elastomeric elements. The elastomeric

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elements of Shipp are beneficial in applying toothpaste to teeth and polishing the teeth to clean under a gum line (Column 4 Line 59 to Column 5 Line 2).

It would have been obvious for one of ordinary skill in the art to modify the toothbrush head of Millar to provide it with elastomeric elements, as Shipp teaches, in order to improve the cleaning and polishing characteristics of the toothbrush head.

11. Claims 25, 27-28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kott, USPN 3,196,299 in view of Millar, USPN 5,315,731.

Kott discloses a head for a power toothbrush (21) comprising a support member (21a) configured to be releasable to a power toothbrush (Column 3 Lines 46-50). Kott teaches a powered device that accepts the heads of conventional toothbrushes so that there is a greater variety of toothbrushes available to a user so that the user has the most desirable bristle hardness, brush contour, etc. and an interchangeable head so that more than one user can use the powered portion of the device (Column 1 Lines 22-36). Kott also includes a handle (24) having a drive mechanism (27) disposed therein. Kott does not include a toothbrush head having a head having bristles of different heights that are arranged so that their heights are symmetric in a non-translatable mirror image symmetry.

Millar discloses all elements above, including a toothbrush head having a head having bristles of different heights that are arranged so that their heights are symmetric in a non-translatable mirror image symmetry, wherein the bristles extend the same length from a top surface of the support member and the top

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surface is contoured so that the bristles have different heights as measured from a horizontal plane taken through the lowest point on the top surface (see above).

It would have been obvious for one of ordinary skill in the art to provide the toothbrush device of Kott with a manual toothbrush having a toothbrush head having bristle tufts of varying lengths that are arranged in a non-translatable mirror image symmetry, as Millar teaches, in order to provide a bristle curvature that converges on an individual tooth and gum line.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C Cole whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Thursday, 7:30am - 5pm, alternating Fridays.

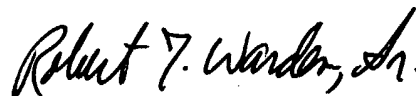
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J Warden can be reached on (571) 272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LCC

18 November 2004



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SUPERVISORY PATENT EXAMINER
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